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489 Only since 1930 have some automobile high-
496 ways been built, and the Communist regime, in cooperation
648 with Soviet Russia, are building the first Inner Asiatic railway,
668 linking Alma-Ata with Lan-chou. This railway will, without
195 doubt, speed up the Sinification of the frontier areas, and
[491] above all add industrialization to agriculture and pastoral
nomadism.

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631 As far as Chinhai was concerned, the Western Mongols
563 (the Oirats) were also locally ruled by dzasaks, the leaders
657 of banners. Unlike the banners of Inner and Outer Mongolia
195 and Sinkiang, however, they did not combine banners to form
leagues or to elect one of their tribal leaders as the captain-
general of the league. The Chinese governor- with his seat in
Sining - functioned as captain-general. In regard to the
nomadic Tibetans, the Chinese government appointed chief-
tains as dzasak-lamas and gave them the rights and the
privileges which this office involves. The sedentary Tibetans
were ruled by t'u-ssus, also appointees of the Peking govern-
ment. By and large, this governmental pattern existed until
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N the Communists came into power.

563 The form of governing non-Chinese peoples changed in the
659 course of time in various ways, but one thing never changed:
195 the aim of the Peking government to rule, to suppress, to
exploit, and to sinify them.

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631 Unlike the eighteen provinces in China proper, the province
635 of Sinkiang (after 1884) and the Eastern Three Provinces, (after
195 1907) the areas comprising Mongolia, Tibet, and Chinese Turk-
estan, although occupying more space than China proper, were
administrated by a quite different type of governmental system.

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631 Political subdivisions of the Chinese Empire such as Mongolia,
657 Chinese Turkestan and Tibet were usually referred to as de-
195 pendencies. This is however an inaccurate translation of
647 the Chinese term "fan," which really means "the barbarian
west." Since the cultural, ethnic and historical background in
these areas was very different from the rest of the Empire,
these regions required, and in practice had, a very particular
type of governmental control. All these frontier territories
were administered by the "Department of Dependencies" in
Peking. This department was subdivided into the following
bureaus:

a. Inner Mongolian bureau, that administered frontier boundaries, titles of nobility, appointment of officials, military affairs, league conferences, and finally organization of banner units of Inner Mongolia.

b. "Reception bureau" for Inner Mongolia nobility, that was responsible for the payments and allowances to the Inner Mongolian aristocracy.

c. Eastern Turkestan bureau, that was in charge of Moslem affairs in Eastern Turkestan.

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135 oil field which was discovered near Yümen in northwest Kansu during the latter part of the last war. Though several wells N had been drilled and a small refinery plant established, oil [315] production was never large due to shipping and transportation [489] difficulties. (It might be noted that construction of the Kansu- [499] Sinkiang Railway has been completed up to Yümen in July 1956. Tank cars may now replace trucks in the transportation of Yümen oil.) Despite these adverse factors, the Peking Government's planned economy gives top priority to the development of the known and the search for the unknown mineral wealth of China's Northwest.

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315 Thirteen construction projects were completed in the Yümen Oil Field, China's biggest oil center, in the spring of 1955. A number of these projects now enable Yümen to produce N eighteen percent more heavy lubricating oil and fifteen percent 316 more kerosene. (NCNA April 22, 1955). A large coal field was discovered in Kansu in April, 1955. It is reported the new discovery with a total of approximately thirty-two million metric tons is four times as large as the A-kan-chen colliery of Kao-lan (Lanchou) county, one of the major coal mines in the province.

S Work has been started by three oil prospecting teams sent N to Sinkiang and Chinhai provinces by the Northwest Geology 315 Bureau under the Ministry of Geology. The prospectors are [654] operating in Turfan and Dzungaria Basins, Sinkiang and in Tsaidam, Chinahai, to locate oil-bearing structures, oil shales, heavy feldspar and other minerals. (NCNA April 19, 1955). One of the plans for 1955 was to complete the prospecting of several oil-bearing structures in the Turfan Basin and obtain the data to design a modern shaft mine in the Urumchi coal field (American Consul General, SCMP, June 1-30, 1955). In addition, rich coal deposits have been discovered in North Sinkiang, particularly in the Ili Valley.

According to 1955 reports, new oil fields were discovered and drilled, e.g., at Tu-shan-tzu, south of Wu-su, and new S coal fields were discovered in Sinkiang. Up to now, eight coal N fields are being worked along the foothills of Tien-shan in 316 Sinkiang, which form one of the largest coal fields in China, ranking third among all the provinces. In coal reserve, Sinkiang is next only to Shansi and Shensi. The present doal reserves of Sinkiang are estimated at 35,040 million metric tons and can last for three hundred years at the present daily output rate of 320,000 tons.

Iron ore and ferro-metals like tungsten, manganese, molybdenum and nickel, as well as some non-ferrous minerals, like gold, platinum, copper, lead and zinc, and aluminum have been discovered and some even worked, especially in the province of

/The Tibetans/

*563 [197] race, the Hsi-fans of the country west of T'ao-chao speak the Tibetan language and are as much Tibetans as the inhabitants of any other portion of the Tibetan plateau. They come into contact [177] with the Koko Nor Mongols farther north, whom they bully and [648] plunder. Unlike the Mongols, who are being pushed back everywhere along the northern borders of China by Chinese agriculturalists, the Tibetans of the Kansu border hold their own [181] against the Chinese colonists. The northeastern Tibetans are truculent and independent as compared to the Mongols, and they take readily and successfully to farming.

[142] There appear to be two physical types in Tibet, the short, round-faced Mongoloid type, and the tall Aryan type with prominent features. The latter type is common among the Tibetans of [291] Amdo. The eastern Tibetan, even though he is in Chinese dress, [177] may be readily recognized by his peculiar habit of standing with [516] his feet turned out at right angles to his body.

[181] On the whole, these people are hardy, independent, and cautious with strangers, but they are also notably hospitable.

2. Patterns of living

*563 342 a. Dwelling

Like all nomads, the Tibetans have no fixed homes. They live in rectangular tents usually made of yak hair instead of felt, with wooden framework. The bottoms of the tents are made fast with iron pins or animal horns. Mud, stone or dry dung is built up around the tent to keep off wind and snow.

*563 342 352 353 The interior arrangement varies little from tent to tent. A mud stove is in the middle, a Buddha image at the left side. On wooden shelves along the walls are chests and boxes where food and clothing are stored. Skin bags of butter, tsamba or flour, and saddles and rifles also hang along the walls. Shelves on the right side hold pans, water buckets, kettles, bowls, cups, a [237] stone mill and a few skin bags. Near the door there is usually a [372] heap of dried ox dung for fuel.

b. Food

*563 262 Farm products do not grow in the cold climate and high altitude, and transportation is difficult. Thus there is little variety [241] in foodstuffs, and eating and drinking are simple functions. The [489] daily fare is beef, mutton and other domestic meats, fresh and sour milk, butter, cheese, noodles, tsamba (parched barley meal) and tea.

*563 264 There are no regular meal times in most households. In winter when the days are short, they may eat three meals a day; in spring and summer, perhaps four or five. During the day they [262] eat tsamba and sour milk. The evening meal is noodles with boiled beef or mutton, though the poor can have noodles and beef less often.

Rich and poor eat with their hands, though the Tu-kung (chief

241 433 Oil seed bearing crops are also raised but in small quantities compared with the output from other parts of China. One reason for this is the lack of markets with a resultant slight incentive to expand and promote the planting of oil seed bearing crops. The following figures are in 1,000 metric tons and 1,000 hectares and are an average for the years 1931-1939. (T. H. Shen. pp. 248-249.)

Province	Soybean	Peanuts	Sesame	Cottonseed	Rapeseed
Ninghsia	2	-	negligible	-	1
Chinghai	-	-	-	-	21
Kansu	38	negligible	negligible	5	25
Shensi	46	12	17	86	51

Acreage in 1,000 hectares (1 hectare = 2.471 acres)

Province	Soybean	Peanuts	Sesame	Cottonseed	Rapeseed
Ninghsia	2	-	negligible	-	31
Chinghai	2	-	-	-	34
Kansu	38	negligible	1	13	54
Shensi	56	9	38	267	141

Besides the geographical and climatic limitations to farming, insects, diseases, and rodents seriously limit crop production. The black smut of wheat, barley, millet, proso-millet, and kaoliang is reported to cause losses of from twenty to eighty per cent of the crops. Yellow rust of wheat causes a loss of twenty per cent. Leaf cur of tobacco at Lanchow in Kansu decreases the yield and affects the quality of the crop. A kind of marmot, locally called the "yellow rat" was a great menace during the drought years 1928-1931. [136] [731]

241 731 The region is frequently subject to earthquakes, droughts, and famines which make farming extremely precarious. Calamities destroyed twenty per cent or more of the crop on the average annually during the period 1904-1929 and in 1930 a great famine swept through the region. Yet according to the population statistics and the total land area, there is no problem of population pressure, at least relatively. In addition, there is the possibility of increasing returns from the land under cultivation if existent farming techniques were improved and innovations introduced, i.e., use of fertilizer, better irrigation facilities, better seeds, etc.

241 489 But the biggest factors preventing increased returns in the Northwest have been the absence of transport facilities and financial assistance; e.g., the inability of the Nationalist Government to provide extensive loans at low interest rates. J. L. Buck points out that the absence of transport and communications to link the Northwest with other parts of China has accounted for the very small quantities of livestock and agricultural produce which have been exported and has hindered the development of local markets. With the growth of transportation, communications, better market facilities, etc., the possibility of increasing returns to agri-

culture on land already under cultivation might be realized.

The Nationalist Government gave no financial assistance of any magnitude until the Second World War. Finally, when it was forced to retreat into the remote areas of Southwest China, the government had to depend largely on the Northwest for food and revenue (agricultural taxes). The Nationalist Government became more interested in the agricultural development of the Northwest and some experimental stations were set up in Kansu. Government assistance, however, was directed primarily to farmers engaged in producing crops for the war effort; e.g., cotton.

After 1938, the price index for farm products rose rapidly in all four provinces and the purchasing power of the farmers began to grow. After 1940, food prices rose speedily and the farmers had more money than in prewar days. By examination of the data of the war years as to whether farmers undertook to increase their scale of production and thereby extend cultivation, we can say that there was little increase in extensive farming (except in the case of Ninghsia) and that the output increases during this period can be attributed (wheat especially) largely to intensive farming.

Turning to the land tenure system, the percentage of farmers who are owners, partowners and tenants, as determined by a land survey undertaken by J. L. Buck, reveals that on the average most of the farmers own their own plots of land. The following chart, compiled from data collected by Buck in 1933 on a sample basis gives us the landholding breakdown. In Farm Survey (a), farmers who own their farmsteads but who rent all their crop land are classified as tenants rather than as partowners. When compared to the agricultural survey (b), (in this survey, 236 localities, 146 hsien, and twenty provinces in China were examined), the results in both cases are similar except in the case of Chinghai where the few samples taken disallows an accurate breakdown. (Land Utilization in China p. 57.)

Percentage of farmers who are owners, partowners and tenants

Province & local	Farm Survey (a)			Agricultural Survey (b)		
Kansu	owner	part-owner	tenant	owner	part-owner	tenant
Kao-lan	86.0	11.0	3.0	60.0	15.0	25.0
Lin-hsia	-	-	-	60.0	10.0	30.0
Wu-wei	96.0	4.0	0	60.0	25.0	15.0
Yung-teng	-	-	-	35.0	5.0	60.0
Ping-liang	82.0	17.0	1.0	85.0	10.0	5.0
Tien-shu	62.0	21.0	17.0	50.0	30.0	20.0
Average	78.6	14.2	7.2	58.4	15.8	25.8
Ninghsia	98.0	2.0	0	96.0	1.0	3.0
Chinghai						
Hwang-yau	67.3	22.7	10.0	-	-	-

13 241 311 farming purposes is not great. Deserts, high mountains, and loess covered plateaux limit the expansion of further cultivation. The margin of cultivation can be extended but not without the great cost involved in reclaiming land and constructing irrigation networks. The dearth of rainfall in many sections of the Northwest and the shortness of the growing season also handicap farming. The destruction of wooded areas and gradual ruination of the top soil in the past has resulted in severe erosion and the elimination of important organic substances necessary for soil fertility.

241 433 489 438 The absence of transport and communications has encouraged greater subsistence farming and less production for markets. The inability of the farmer to sell his surplus and obtain a profitable return so that he could increase production or practice more diversified farming, has stunted the growth of internal markets in the Northwest region. The inability of the Nationalist Government to link the internal markets of the Northwest to China Proper by a series of transport and communication systems, and provide for a free flow of capital, as well as short term low interest rate loans, has seriously retarded the development of agriculture.

241 311 435 433 We have seen from our data that while the above problems are quite serious, there exists no real problem of tenantry or population pressure on the land. Furthermore, given high prices for their goods, as occurred during the second world war, the farmers of the Northwest, in some instances, could by more intensive farming methods raise the level of output significantly.

241 311 433 Both T. H. Shen and J. L. Buck (agronomists) feel that if there were some restoration of fertility to the land in terms of resodding and planting root crops, and if a large portion of the hilly sections could be turned over to the raising of livestock, certain sections of the Northwest would come to have a distinct comparative advantage economically so far as the production of livestock is concerned, and greater incomes would be forthcoming to the rural inhabitants (this assumes such products could be cheaply exported and necessitates a proper balance between farming and livestock raising).

241 433 One of the most vital factors not yet mentioned, is the necessity for constructing irrigation works and to further extend those already in existence. This entails also the building of large reservoirs; the small magnitude of irrigation works is one of the greatest stumbling blocks to the development of areas like Sinkiang and Kansu, since most of the land there is desert.

However, to carry out the above projects which would overcome some of the obstacles to the expansion of agricultural production, it would be necessary that large capital outlays be available. Serious consideration of greatly expanding the area under cultivation might, however, lead to higher costs than any administration could bear, and in turn result in diminishing returns.

C. Civil Aviation

The Chinese Communist Civil Aviation Company, which until the end of 1955 was a Sino-Soviet jointly-owned corporation and was still entirely adjusted to the Russian system, raised its service from two to four trips a week from Lanchou via Chiu-chuan, Hami to Urumchi. There was another flight twice a week, continuing the route from Lanchou to Sian where two sub-lines existed, one to Peking and the other southbound to Chungking. A third flight, also twice a week, connected Urumchi with Alma Ata through Ili by the Sino-Soviet international route; and the fourth was running inside Sinkiang from Urumchi via Kucha, Aksu to Kashgar.

IV. Conclusion

The influential role which the development of transportation and communications can play in the creation of a favorable climate for sustained national economic growth, needs no elaboration. The Northwest which contains many of China's untapped mineral resources, and where the potential of agricultural development is fairly high, is a region where the man-resource ratio is low and the long-run economic potential is promising, provided it is linked with the populous regions of China and the outside world by better transport and a modern system of communications.

Transportation and communications development in Northwest China used to lag far behind the other regions as did its agriculture and industry. After the establishment of the Communist regime, transportation construction activities in this area have increased greatly in the form of railway and highway construction. Of the total railway construction in Red China from 1950 to 1955, newly-built roads in the Northwest amounted to thirty per cent. Meanwhile the Lanchou-Sinkiang Railway, Lanchou-Pao-t'ou Railway and Chengtu-Paoki Railway were still under way and the Lanchou-Chinghai Railway was projected for 1956.

Highways were constructed or renovated mostly along the old routes already in existence prior to 1949, some of which might not have been motor roads. Among them the most notable ones were the Hsi-ning-Tibet Highway, Sian-Lanchou-Urumchi Highway, Ansi-Tun-huang-No-chiang-Ho-tien-Kashgar Highway and the T'si-ning-Chin-hung-shan-No-chiang-Kashgar Highway. Three international highways starting at Urumchi across the Sino-Soviet border linked up with the stations on the Soviet Turksib Railways. Air transportation was to be established to strengthen the Sino-Soviet relationship from Peking to Moscow via Sian, Lanchou, and Urumchi.

It is true that Chinese Communists had devoted much attention to construction in the Northwest area, especially in the phase of transportation and communication. Aside from their shrewdness

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*668 in understanding the long-run economic potential of this region,
489 it is equally true that there must have been some other reasons
433 forcing them to develop this remote region more swiftly than they might otherwise have done, investing in it sizable amounts of much needed capital backed by considerable forced labor. Other factors, both internal and external, should therefore be taken into consideration. In the first place, Communist China had made a tremendous effort to shift the center of its gravity from the coastal regions into these relatively empty lands bordering Soviet central Asia, perhaps partly as a result of the United Nations embargo and the Korean War. Secondly, the forced pace of development in the Northwest might be partly a defense measure. During the War in Korea it became clear how vulnerable Manchuria was to bombing attacks. Had the United Nations chosen to do so, most of Manchuria's industrial complexes could have been destroyed. But in the Northwest, factories, railways and mines were far
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[648] safer than anywhere else in China. Moreover, this area would assure maximum secrecy for projects which Red China and Russia were reported to have been jointly undertaking. ("I Saw Communist China" by Robert Guillain in the Saturday Evening Post, June 2, 1956. p. 114.)

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*668 Following on the heels of the railway construction work, a
433 huge oil refinery at Lanchou was built. It is also reported that
[382] between Lanchou and the site of the refinery, a road was con-
[491] structed more than twice as wide as Fifth Avenue in New York
N city, and a large hill thickly covered with houses was completely
[498] leveled to make the road straight. At Lanchou the railway yard under construction contained fifty kms. of tracks, with modern equipment such as turntables, grain silos, refrigerating plants and the like, all brought from Russia. Along the wide road, the beginning of what is called New Lanchou has arisen. In Sinkiang,
S
668 a new city was born in Urumchi, where giant factories have been
433 built, including the Sinkiang Non-ferrous Metals Co., the Sin-
327 kiang Petroleum Co., the Sinkiang "August 1st" Iron and Steel
328 Plant, the Sinkiang Machinery Plant, the October Motor Car
382 Repair and Assembly Shop, the Urumchi Automatic Electric Plant,
39 and the like. This accomplishment in industrial construction and
[489] future plans of industrial development are indeed very much tied up with communications development.

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*668 Communist China may very well focus its principal attention
185 on the Northwest during the period of its second Five Year Plan
433 scheduled to begin in 1958, just as the first Five Year Plan con-
[648] centrated on the Northeast. The Northwest might then play a major role in the economic relations between China and Russia, and be industrialized to a level comparable with Manchuria.

It may therefore be concluded that so long as there are both internal and external pressures, and the "lean-to-one-side"